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ABSTRACT

The paper addresses California state funding of higher education in the context of an anticipated increase in enrollment in the near future. It traces the policies of funding the system from 1990 to 1995. Simultaneous studies in Florida, Michigan, Minnesota and New York provide data for comparative analysis. The paper examines factors influencing state funding grouped into three categories: (1) contextual those factors such as a past policy, administrative action or environmental condition which results in a change over a short period of time; (2) transactional factors influenced by both state and institution such as student fees and the percentage of government vs. family financing; and (3) controllable factors which may be the most influential but about which there is little agreement. Matrixes listing these factors are provided. The study concludes that the stake holders in higher education should look at higher education funding systematically considering the multiple factors and their interaction for clearer decisions and policies. (Contains 47 references.) (DM)

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ED 410 835

Understanding Policy Issues of State Higher Education Finance Through Case Study Research

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The recession of the early 1990s was accompanied by pronounced declines in state funding for higher education. In the United States, spending on higher education was 14% of state budgets in 1990 and had decreased to 12.5% by 1994 (Gold, 1995a). Appropriations for higher education in nearly every state began to wane as lawmakers looked for ways to deal with lower state revenues and to meet increased caseloads in such areas as social services and corrections (Mortenson, 1994). Of the major spending categories for state government, higher education and local government aid were the major losers during the recession (Roherty, 1996).

The higher education funding declines of the early 1990s have improved as economic conditions have improved over the last two years (Chronicle of Higher Education, 1996), but the projection of high school graduates over the next ten years will increase demand and place unprecedented challenges on higher education. California and Florida, for example, are expecting increases of 47% and 51%, respectively, in the number of high school graduates by the year 2006 (WICHE, 1993).

Understanding state funding responses to higher education, whether caused by economic difficulty, demographic changes, political pressures, or social challenges is a concern to educational administrators and state officials alike. In a 1995 nationwide survey of state legislators from forty-nine states, 44% said funding levels are adequate to meet current needs, but only 25% said that funding levels are adequate to meet future needs (Ruppert, 1995). In the

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survey, legislators expressed an awareness regarding future demand, perhaps contributing to their anxiety over future funding needs.

State funding levels are important indicators of state priorities and a state's philosophy toward higher education. State funding levels affect tuition rates and enrollment opportunities as well, particularly in public institutions. New York public tuition at CUNY and SUNY, for example, was increased three years in a row to help deal with state budgetary problems of the late 1980s and early 1990s (Sheffer, 1995). A legislatively appointed task force in Massachusetts concluded that erratic state funding to higher education not only drove much of the 112% tuition increases over four years, but higher education services and quality also were affected (Breneman, 1994). Callan (1993) states that unexpected state revenue shortfalls in California increased tuition rates and obscured the need for the academy to respond to the social, demographic, technological, and long-term economic changes it faces.

The existing literature base examining state funding responses to higher education provides some descriptions of the consequences (e.g. impact on tuition and enrollment) that result from decreased state funding to higher education (Sheffer, 1995; Barba, 1995; Breneman, 1994; MacManus, 1995) or how states have attempted to deal with higher education in the face of fiscal difficulty (Ashworth, 1994; Bateman and Elliot, 1994; Sell, 1993). These responses are essential to this investigation because they often point to the factors that drive the response. To fully understand state funding responses to higher education, though, further study is needed. This study will look beneath the surface to uncover specific factors that influenced state funding levels in California from 1990 to 1995. Although every state has a different economic, political, and social climate, an in-depth investigation of an influential state can be instructive to those who wish

to understand what drives a state's funding decisions. The researcher chose to focus on California for several reasons: 1) the state's higher education systems have enjoyed times of great state support as well as endured times of state funding declines, 2) the projected demand for higher education in the state is such that scholarly research is needed to stimulate the exchange of ideas and create discussions about how this demand can be met to preserve the higher education ideals that have produced a formidable system of public higher education in California, and 3) Patton's (1980) idea of purposeful sampling states that one may focus on a particular case if it offers wide variation, is politically important or sensitive, and offers an opportunity to learn more from relative to other cases. In addition, California houses some 12% (Chronicle of Higher Education, 1995) of the nation's higher education population. The state also has three distinct systems, each with separate missions. The University of California (UC) is responsible for the research function, the California State University (CSU) system's primary emphasis is teaching, and the California Community College (CCC) system has historically made higher education opportunity available to those who were not yet prepared for one of the other two systems or could not afford it.

The current study is concerned with: a) the factors that affected how California funded higher education from 1990 to 1995, b) how California compared to Florida, Michigan, Minnesota, and New York across the various factors during this time, and c) how the factors affecting California's funding for higher education can best be conceptualized.

Background on Conducting the Study

The study was made possible in large part by the California Higher Education Policy Center (CHEPC) and the Ford Foundation. The CHEPC secured funding from the Ford Foundation to sponsor an investigation of higher education finance. The CHEPC assembled a

team of senior policy researchers and three doctoral students to produce five descriptive case studies on state funding for higher education. The unit of analysis for the study was the state. California, Florida, Michigan, Minnesota, and New York were selected as the case study states to provide geographic representation of states that provide significant funds to their higher education systems. Their differences in political climates, fiscal conditions, and state governance structures also were considered. All of the study states, with the exception of Minnesota, are among the most populous in the nation. The author wrote the California and Michigan cases and cowrote Florida.

The cases were meant to be descriptive and can be thought of as a repository of information on state higher education funding. Thus the cases have no particular focus; rather, their function is to capture all salient financial higher education issues in the respective state. The case studies served as a starting point for the participants of a national Roundtable on Public and Private Finance of Higher Education (CHEPC Roundtable, 1996). The Roundtable brought together policymakers and higher education administrators and researchers to generate meaningful policy consideration for the challenges that lie ahead. Insights from this meeting have been incorporated throughout this study.

The current study subjects the case study data to additional analysis to move toward a systemic explanation of the factors driving California's funding responses to higher education. The study also integrates comparative data from the other study states to discern common factors across large states that positively or negatively contribute to a state's funding decisions. Conversely, the use of comparative data helped distinguish those factors that affect funding that are unique to California.

Contributions and Limitations of the Study

This investigation moves the discussion of state funding for higher education beyond ex post facto explanations of the consequences of funding changes to a conceptual explanation of specific factors that drive state funding for higher education in California. The case study approach was used to move towards this explanation. The case study approach provides an open and flexible framework in which to study an evolving area of interest; it also lends itself to combining empirical data with existing constructs to illuminate understanding of a specific case and possibly strengthen current theory or create new ideas. Wieviorka (1993) believes that the end result of empirical research produces new or refined constructs. Wieviorka also states that as additional research is conducted in the area of interest, theories and generalizations become more tenable as they are tested and revised. The use of the case study enables advancement beyond the current explanation of general factors that influence state funding, which include categories such as political factors, demographic factors, economic factors, etc. The investigation provides an important example that can furnish guidance to those (be they state policymakers, higher education administrators, etc.) who wish to understand specific factors that contribute to a given level of funding to higher education.

The study is limited in that the conceptual explanation is for California and cannot automatically be generalized to other states. Every state has different historical, social, political and economic factors that have combined to form a public perception of what higher education should be doing and how it should be funded. The comparative data in the analysis only provided a view of how other large state's contrast to California on factors that affect state funding for higher education. Although case study is not the tool of choice to generalize beyond the actual

case, it is a superior tool for inductively building theory from the analysis of documentation, interview transcripts, and any quantitative data specific to the case. Merriam (1988) does suggest that one may build a general explanation that fits each individual case, even though the details vary.

Finally, it should be noted that causality cannot be assigned to any one factor for increasing or decreasing state funding by a known amount. It is the interaction of many factors, and their intersection at different points in time that produces a given result. The presence of this multiple conjunctural causation (Ragin, 1990) makes claims of generalizations and causality even more elusive.

Describing the State Higher Education Funding Environment

Leslie and Ramey (1986) found that public higher education institutions believed enrollment was a key "force" that could increase appropriations beyond the increment. Enrollment based formulas were popular during this time, but, surprisingly, Leslie and Ramey found that added enrollments commonly reflected a net financial loss on an appropriations per student basis. The author's concluded that political processes and social and economic variables were more influential in determining public higher education appropriations.

Almost twenty-five years after his original work, Wildavsky (1988) revisited budgetary interplay and found the principles of incremental budgeting eroding because disagreement was no longer confined to "How much should be added to the base?", but "What should the base be in the first place?" He agreed with Schick (1982) that incrementalism is based on the expectation of continued plenty, but as prosperity has declined, so has incrementalism. Disagreements were

magnified by not only a decrease in growth, but by differing philosophies regarding such things as entitlement and corrections spending.

Certainly, the state of the economy is a large factor in determining a given function's appropriation, but Wildavsky concluded that the budgetary norms that drive the appropriations process were far more influential. This is because the budget is "not only an economic but also a political instrument" (Wildavsky, p. 407) and represents the outcome of a political struggle. The factors that influence budget norms include: the influence of special coalitions representing the various functions of government; the power of the chief executive (e.g. is line-item veto authority present?); and the relative influence of individuals (committee appropriation chairperson, for example) or groups (congressional factions, for example) that oversee the budgetary process.

Layzell and Lyddon (1990) identified the state's historical, political, economic, and demographic factors as being important in determining higher education funding. In addition, they identified governance and regulatory patterns and funding methods used to determine state appropriations as bearing on funding levels. Specifically, the state's historical relationship with higher education, the strength of various interest groups, state leadership, and partisan political activity are all factors that influence higher education funding. Layzell and Lyddon also pointed out that the existence of compelling state interests and state demographics have a unique effect on state funding for higher education.

It is difficult to conclude that any one factor is the primary determinant of higher education funding levels. The recession of the early 1990s makes it tempting to posit that the state's economic condition is the primary factor, but anecdotal evidence and academic research indicate that political factors may be just as strong. In the state of Michigan, for example, a new

governor's pledge to support higher education combined with public higher education's political strength and helped to maintain funding throughout the 90s recession (Kleine, 1995). Michigan is an excellent testament to Wildavsky's suggestion that politics, more than resource availability, drives where public money will be channeled. Indeed, there are a number of factors that affect state funding for higher education, and the way in which these factors interact at any given point in time is equally important.

Defining the Funding Environment: In a report to the California Higher Education Policy Center (CHEPC), Halstead (1995b) defined three parameters that describe the surroundings of higher education: environmental factors, performance measures, and operation actions. Environmental factors are those conditions that influence but are beyond the control of the higher education community. Examples of environmental factors might include the number of high school graduates in the state, the level of income taxes collected, and the current size and power of the public higher education system. Performance factors are those indicators that gauge public higher education's success of meeting prescribed goals. Performance factors might measure how many of the state's high school graduates are attending in-state institutions or how many low-income students are receiving state financial aid. Lastly, operation factors are decision variables that define actions that public officials can take in planning and delivering higher education. For example, the state ultimately determines how much funding higher education receives and can therefore use to operationalize and achieve its goals. Also, indicators of retention versus starting rates may be an indication of how well a particular institution is carrying out its function and mission.

Levine (1980) and Ackoff (1994) define organizational parameters that have similarities to Halstead's framework. From a perspective that encompasses all public organizations, Levine defines three parameters: situational, outcome, and managerial factors. Situational factors are roughly analogous to Halstead's environmental factors in that they are largely beyond the institution or the state's control. Managerial factors are seen as the inputs and actions that are controllable and undertaken by those who manage the organization and hence align quite well with the operation factors. Outcomes are a measure of the viability of the organization, largely dependent on managerial factors, and therefore equate closely with performance measures.

Ackoff offers a somewhat related but different view of the organization's environment by describing the organization's surroundings before discussing specific variables that might define such surroundings. To accomplish this, Ackoff speaks of an open system's environment and its affect on that environment in terms of control and influence. An open system has environmental elements that affect its properties and performance. A contextual element is that part of the system which cannot be influenced nor controlled. That part of the environment that can be influenced but not controlled is the transactional environment. Ackoff also implies that an open system may contain components over which it does have control, so controlled factors are the third and final parameter of this conceptual framework. Contextual, transactional, and controllable parameters of an organization dynamically interact to affect the organization and the environment. In sum, Ackoff first thinks in terms of what can be influenced or controlled. More importantly, specific factors are not first developed and then placed into categories; instead, the definition of the categories drives the placement of the factors.

Each of these conceptualizations contains ideas that are helpful to frame the study analysis; but, taken separately, each is incomplete. The analysis will thus be based on a synthesis of ideas taken from all three authors. Halstead's framework is attractive because it is specifically designed for public higher education. His assignment of specific metrics to each parameter (or category) operationalizes the framework rather than confining it to mere abstraction.

Levine's framework was developed to describe the environment that surrounds any public organization during times of fiscal stress. Most useful is Levine's description of the situational parameter, which is closely aligned with Halstead's environmental parameter and Ackoff's contextual parameter. Levine, however, describes some general components of the situational parameter that allow the reader to logically break it down into two parts: 1) those that the state has little or no control over in the short or long-term, and 2) those that the state has little control over in the short-term, but may possibly influence over the long-term. Factors that may be influenced over time are not easily changed because existing structures, relationships, and attitudes are usually not altered immediately. The state's taxing and spending authority, how the state defines the scope of its service responsibility to the people, the structure of the public organization, and the demands of citizens, public employees, and interest groups all define those things that may possibly be influenced over time but cannot be changed immediately. A state's birth rate is an example of a factor which cannot be controlled or influenced and would fall into the first category defined above. The distinction between long and short-term situational conditions is implicit in Levine's explanation, but it has been teased out because it is a valuable consideration for a synthesized framework.

The names of Ackoff's three categories (controllable, contextual, and transactional) will be used for this study, but they will be redefined to accommodate the contributions of Halstead and Levine. Contextual factors as used here will meet one of two criteria: 1) they are not subject to control or direct manipulation by the state or the institution (for simplicity, institution will signify a higher education institution or system), and 2) if they do change as a result of some action, the change is incremental and long-term because it must usually endure a process of tension and debate by opposing forces. An incremental change as defined by the second condition will denote those changes that take over a year to implement. This definition for contextual factors acknowledges that organizational activity contributes to its environment, though it may not be immediately apparent. That is, the environment imposes on the organization, but the organization may also incrementally affect the environment.

Transactional factors denote those factors that the state and institution can influence or those they can influence but must negotiate between themselves. Even constitutionally autonomous higher education systems, like the UC, maintain a relationship with the state, together determining such things as student fees. If, for example, the UC leadership negotiates with the governor, extra appropriations may provide enough resources so that the UC leadership agrees not to raise tuition. Finally, controllable factors will be those that either the state or the institution can directly affect. The consequence of this effect may or may not be known, but controllable factors essentially define the levers the state or institution may pull in an attempt to produce change.

A Typology of Funding Decline in Public Organizations: Defining a conceptual view of state higher education funding is an important endeavor if higher education is to properly address

future funding challenges. Levine's (1980) work offers a typology that explains why any public organization experiences state funding decline, and the behaviors the organization typically engages in to avoid or mitigate the impact of this decline. Levine asserts that the nature of many public organizations further complicates whether they are worthy of requested funding. Without fiscal support and growth, for instance, public organizations such as higher education are unable to attract and accommodate new, young talent because they are constrained by merit and career tenure systems.

Levine's typology of public funding decline is similar to those developed by Katz and Kahn (1966) and Wamsley and Zald (1973). Levine is interested in studying growth and decline because, for public organizations, the level of growth could be an indicator used by policymakers of how acceptably the organization is fulfilling its function. Growth also signals governmental priorities, particularly during times of fiscal austerity. Levine categorizes the causes of public organizational decline (in terms of state funding) into the four-cell typology shown in Figure 1. Causes of decline fall along two dimensions: 1) those internal or external to the organization, and 2) those dictated by political conditions or economic/technological ones.

Problem depletion: A political definition of a problem initiates government intervention and commitment of resources to attain critical masses and then the function/organization experiences resource contraction after the problem has been solved, alleviated, or has evolved into a less troublesome stage or politically popular issue (Schulman, 1974). Of the four causes, problem depletion is the most familiar. It is largely beyond the control of the public organization and can involve such factors as demographic shifts, problem redefinition, and policy termination.

Environmental entropy: This cause occurs when the capacity of the environment to support the public organization at prevailing levels of activity erodes. The political dimension of this cause also may be important because the capacity of a government is largely dependent on the willingness and ability of taxpayers to pay taxes. The ability of the taxpayers to pay can be determined by examining a government's economic base.

Political vulnerability: Is a cause traced to the internal problems that may make a public organization susceptible to budget decreases. Negative perceptions, internal conflict, and poor leadership are examples of such internal problems. The size and age of the organization largely factors into its ability to resist budgetary fluctuations. Larger organizations seem less vulnerable to negative environmental conditions and also tend to have established a powerful political base. Such organizations would fit Stinchcombe's (1965) proposal that organizations can indeed adapt certain components of their environment to what they are doing rather than the other way around. Why wouldn't they change? Because they become institutionalized and the benefactors view change as uncertainty. Such organizations figure out how to use particular environmental conditions as a means to perpetuate themselves (Ibid.).

Organizational atrophy: A common cause for decline in all organizations but particularly prevalent in public organizations since they lack signals from the market, which may indicate a malfunction. A partial list of management failures that may give rise to organizational atrophy: inconsistent and perverse incentives, decentralized authority with vague responsibility, lack of self-evaluating and self-correcting capacity, and obsolescence caused by routine adherence to past methods and technologies in the face of new and changing problems.

Data Sources

The study relied on qualitative and quantitative data collected during the development of the descriptive case studies. Interviewees were the primary source of qualitative information and held various positions in California related to higher education financing at the state, system, and campus level. Positions held ranged from state legislators to higher education administrators. Qualitative data sources also took the form of news media articles, state reports, and scholarly works relevant to state funding of higher education. Most of the media articles were collected from major California newspapers such as the Los Angeles Times and The Sacramento Bee. State reports were collected from legislative offices and higher education agencies.

A number of state reports and scholarly sources contained quantitative data in the form of yearly fiscal state appropriations and higher education revenues and expenditures. The California Postsecondary Education Commission (1995a; 1995b) provided a number of publications specifically tailored to California higher education's' sources of revenues and expenditures. Scholarly references (e.g. Gold, 1995; Halstead, 1996) also provided quantitative fiscal information on the state and the higher education systems in California.

Design Components

Interviewing Design: Interviews were arranged by the CHEPC. CHEPC's intent was to create synergy between a governance study (also sponsored by CHEPC) and the finance case study by scheduling interviewees to only one session in which both governance and finance questions could be asked. Most of the interviewees held positions that enabled them to address issues of both governance and finance, but additional interviews were scheduled for the finance

study as necessary. Interviewees were assured that the case studies would be written to preserve anonymity, to the extent possible.

The finance questionnaire was designed to serve as a guide for the interview rather than to ask respondents each question formally. The approach was to initiate an open-ended conversation, guided by the open-ended nature of the questions, and then ask about any issues that were not addressed near the end of the interview. This approach was taken by both Glenny (1959) and Berdahl (1971) in their respective studies of higher education coordination and governance.

The "open-ended" interview approach (Jahoda, Deutsch, & Cook, 1951) is meant to accommodate the informant's unstructured responses to issues rather than adhere to a fixed interview format. This approach is a valuable design component in that informants can respond based on their own perceptions and experiences, allowing for the emergence of divergent or convergent views among interviewees. Interviews occurred concurrently with other data collection efforts, aiding the researcher in discerning which portions of the interview data required special attention.

Coding. A coding scheme for the governance study was developed by the project's senior researcher (State Structures for Governance, 1995) and leveraged by the author to design a general coding scheme for the finance case studies. The researcher then used the general coding scheme as a guide to develop coding categories specifically for the California case study.

The coding categories were developed to segment the data by major finance-related themes, activities, and processes. The coding scheme for California was developed prior to the analysis of the interview transcripts, but was altered after the transcribed notes were reviewed and

subjected to the coding process. Such revision is a common practice since the coding categories used by the analyst may be preexisting or they may emerge from the data (Degener,1983). Bulmer (1979) points out that coding categories usually emerge from an interaction of theory and data.

Each paragraph of the transcribed interview notes was analyzed and broken apart if more than one topic seemed to be contained in a single paragraph. Some paragraphs and sentences contained multiple ideas simply because of the way the informant responded, and, in these cases, the text was assigned more than one code. The interview data was sorted, printed and reviewed a second time. A final review served to refine the coding process by merging some data categories together and separating others into more than one category.

Matrix Analysis: Matrix analysis was the primary strategy used to analyze case study data. The mere volume of data on California and the other four study states necessitated an analysis strategy. Miles and Huberman (1984) advocate "displaying" the data in matrix form because it may then be viewed simultaneously rather than sequentially. When we read a large amount of text, for example, we are sequentially processing the information; when we look at a picture, or a matrix, we are able to see many things at once, or simultaneously. Miles and Huberman suggest several specific techniques and general principles for analyzing qualitative and quantitative data using matrix analysis, many of which were useful to this study. Specifically, suggestions for within-site analysis and cross-site analysis allow for a more thorough investigation of factors affecting state funding for California higher education. This strategy also facilitates comparison with other study states.

The concept of grouping, or clustering, data together formed the basis for constructing the within-site matrices for the state. The basic principle of a clustered matrix is conceptual coherence, that is, arranging the data in a matrix form that brings together those items that "belong together" (Miles and Huberman, 1984).

The second step of the matrix analysis was to conduct a cross-site analysis. The researcher did not conduct interviews in three of the five study states. Given this, the focus of the cross-site analysis utilized statewide indicators (as opposed to institutional or system data) for comparing the other four study states to California. The strategy for the cross-site analysis was to construct one matrix containing factors from any of the within-site matrices that could be compared across states.

Analysis Results

The analysis is intended to organize the case study data and put it in a form that is conducive to creating new ideas and refining existing theories about state funding for California higher education. Factors were grouped under the three categories developed earlier: contextual, transactional and controllable. Grouping variables indicates that the variables of one group have more in common than those of different groups (Krippendorff, 1980).

Contextual Factors: Contextual factors are identified as such when a past policy, administrative action, or environmental condition has resulted and is unlikely to change over a short period of time. Examples would be term limits, the strength of the governor, the number of graduate versus undergraduate students, and the size and influence of private versus public higher education. All of these things, though they do not change immediately, can be thought of as

evolving through the incremental process of history, legislative debate, citizen action, or political posturing.

The initial grouping contained more factors than could be integrated into a concise analysis, but the purpose was to first group all salient factors that emerged from the case study and then eliminate redundancies. For example, income levels, taxing capacity, unemployment, and state revenues all say something about the state's economic condition. The unemployment factor may not be necessary to incorporate into the coming matrix analysis, however, since the other three factors supply adequate information about the state's economic health.

Transactional Factors: Examples of factors that are influenced by both state and institution are student fees and the percentage of higher education financed by the student versus the state (state and family payment effort). In California, the interaction of the governor and the educational leadership is key to determining student fees and appropriations to higher education. For UC and CSU, student fees and state appropriations are related and largely a function of state and institutional transaction.

Controllable Factors: Controllable factors are arguably the most important factors of the framework, but the least developed and agreed upon. The assignment of a particular factor as controllable by the state or the institution is especially contentious when the factor indicates that improvement is desirable. Attributing a certain factor as controllable by a public organization is controversial because there is often little if any agreement on standards of performance; goals are often dictated by political necessities, and the goals are often unclear or subject to debate (Dunlop, 1979). In higher education, for example, it may be easy to identify teaching ability as an important input to the educational function, but measuring it is difficult and contentious.

Still, the identification of controllable factors remains important to this study since it highlights factors that bear on organzational efficiency and effectiveness issues. Controllable factors were identified as either inputs, outputs, or outcomes (Osbourne and Gaebler, 1993). Controllable factors that qualify as inputs for higher education include the management skill of the institution's administration, the ability of its instructors, or the number of students admitted for study. Example of outputs that were analyzed were the number of degrees awarded and measures of institutional expenditures. A GAO study (1996) found that institutional expenditures were one of the two factors most responsible for the exorbitant tuition increases of the early 1990s.

Institutional expenditure measures such as expenditures per FTE were created for the study. It was found that general expenditures per FTE rose dramatically for all three systems between 1988 and 1995. Interestingly, CSU's and CCC's appropriation and student fee revenues per FTE were not enough to meet their general purpose expenditures per FTE during the time period analyzed.

There are diverging opinions regarding how higher education should manage its expenditures. A participant at the national Roundtable said that some theorists (for example, see Baumal and Blackman, 1995) would have difficulty looking at any measure of expenditure and demanding more measures of efficiency and effectiveness, believing that public higher education is a state investment that will not be getting any cheaper.

The contentious measures for public organizations of which Dunlap spoke are often outcome measures. An outcome measure is not only concerned with how many degrees are awarded per student but whether or not those students received jobs after graduation. The complexity and controversy that accompanies the use of outcome measures for higher education

is beyond the scope of the current study, but some controllable factors were identified as outcomes for completeness. The author did not assign these factors to the state or the institution since further research is needed.

Within-Site Matrix Analysis

Miles and Huberman's suggestions for within-site matrix analysis were utilized to view contextual, transactional, and controllable factors. In some instances, the data sources may not have converged to identify a certain issue as important; but if the factor seemed to be a legitimate consideration to the production of the overall case, it was included in the appropriate matrix. An example of this is a state's wealth and its related ability to collect taxes. Most interviewees did not specifically address this as a concern, but Halstead's tax capacity and tax effort statistics reveal something about the philosphy and culture of the state and how government is viewed. One might deduce, for example, that a state that does not tax its citizens to the extent it could may not view government as a positive mechanism to stimulate change, according to Elazar's (1984) political culture classification.

A within-site matrix was constructed for each type of factor. Table 1 is a single matrix combining the highlights of all three matrices. The within-site matrix factors are in the first column under the heading "Factor," and the first row contains the headings for the data sources that were used to determine something about the factors. The matrix is constructed so that one may simultaneously view what each data source concluded about the factor. Each factor is designated as contextual, transactional, or controllable.

Factors that describe state government structures were mentioned often by case respondents. Many respondents spoke of the governor's potential influence on higher education,

Table 1
Within-Site Matrix

Factor \ *Source*	Interview Results	Document/Reports, etc	Quantitative Data	Does data reveal this is a concern?
Contextual				
Income per capita	concern over chasm between rich and poor	recovering from the recession	rising, but slowly, mainly due to recession	moderate problem if viewed with tuition
Future h.e. demand	expecting a surge, growing minority population	rapid growth in high school grads; overall demand will increase	estimated 488,000 demand by 2005	reveals a need to accommodate increase
Recession	long and short-term impact on higher education	appropriations recovering but not to past levels	decrease in various measures of spending to higher ed	problem of resources for future capacity
Governance structures	weak state agency; CSU leadership strong	Negative concerning UC board (too political)	N/A	CCC structure described as incoherent; lacking a clear state voice
Gubernatorial Strength	strong and increasing	press doubts governor's concern for higher ed	N/A	depends on viewpoint
Strength of Privates	weak	moderate	has 12% of headcount	may be needed for future demand
Competing State Interests	intensifying	rising caseloads in corrections & medicaid	h.e. lower portion of budget	depends on viewpoint
Transactional				
Appropriations per student	since recession, less $'s available per student	number of students decreased, which should have increased appropriations/student	from 1990 to 1995 decreased 6.6%	possibly, since funding/FTE declined more than nat'l average
State Student Aid	level of student aid is not fulfilling promise of Master Plan	Cal grant student aid part of Master Plan to ensure access	only 20% of needy receive Cal grant	neither income levels nor student aid have kept up with student fee increases
Tuition and Student Fees	rose too rapidly during the recession	Strongly tied to level of appropriations	dramatic rise during recession; now appear stable	rising fees coincided with FTE decreases; must also look at loan, aid availability
Family vs State burden for paying h.e.	most felt family portion rising too much	burden has shifted from state to family and local sources	family pmt trend up; state trend downward	depends on state philosophy and political acceptability
Controllable				
Expenditure Growth	More concern among policymakers	Areas of growth instruction, administration and research	Trend is upward for all three systems	CCC and CSU expenditures rose faster than general funding between 1988 to 1995
Institutional Leadership	CSU and UC have more direct contact with policymakers	CSU leadership particularly strong	N/A	Concern over CCC leaderships ability to operate within established system
State (gov & leg) involvement w/ h.e.	Described as low	Focus on other state functions	N/A	Yes, from higher education's perspective
Budget Process	No major dissatisfaction	UC and CSU now negotiate with governor; CCC more formalized	N/A	No

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if he or she chose to express an interest. The choice to express an interest in higher education resides with the Governor (controllable), but the ability to act on that interest is part of the state's political structure (contextual). In California, the governor's political power has evolved over time and is not likely to change or be shifted to another political body in the short-term. Some observers opined that term limits would make the governor even more powerful while others believed that the legislature had relatively little power compared to the governor in the first place.

Transactional factors most often mentioned by case respondents, by newspaper articles, and other case sources were tuition and student fee levels. CCC, CSU, and UC tuition rates rose 225%, 60.6%, and 66.5%, respectively, from 1990-91 to 1994-95. Personal income rose only 11.7% during this same time period, and student aid did not keep pace either. Family and state payment factors revealed that the state was using less of its tax revenues for students during the 1990s while tuition was taking a larger and larger proportion of family disposable income. The result was a decrease in the amount of higher education financed by the state and an increased burden on the family.

The transactional factors get at the issue of whether higher education will be run as a state-agency or be free to operate in a "free-market." Curry, Fischer and Jons (1982) identified higher education institutions as falling along a continuum: state-agency, state-controlled, state-aided, or free-market. The financial characteristics that move an institution from being state-controlled to being state-aided are increased financial responsibility between the state and the institution (Ibid.). The matrix analysis shows that the student, or families, are financing more of higher education than in the past, raising questions of whether the institutions are proposefully

moving towards a free-market model and whether higher education is properly viewed as a private good rather than a public good.

The two controllable factors associated with the state are gubernatorial and legislative involvement with higher education and the budget process. Both the executive and legislative branches have not been particularly concerned with higher education over the first half of the 1990s. Individual legislators and the governor have chosen to focus on other areas such as the state's growing number of caseloads in both social services and corrections.

The state also controls the budget process. The case study revealed that the governor can affect the "rules of the budget process" by dealing with system CEOs, as he recently has done with CSU. Individual legislators also may affect the budget process if they are in influential positions on the appropriations committees. These individuals may require system leaders to testify, present evidence of need, etc. Respondents confirmed that this aspect of the budget process depends on who leads the appropriations committee. Finally, educational leadership and institutional expenditures were discussed in the previous section and are more controlled by the higher education system.

Cross-Site Analysis

A cross-site matrix that compares select contextual and transactional factors across the study states also was conducted. The primary purpose of this matrix was to provide an opportunity to view the environment other states faced from 1990 to 1995, and see how these states responded to state funding challenges as described by the different factors.

Examining other states alerted the researcher to subtleties that should be noted in any higher education finance study. For example, when examining higher education appropriations

from the state, one must look in terms of both dollars and percentages. There are states like New York where a given year may show that higher education was a smaller portion of the state budget relative to the prior year, but only because the budget grew in other areas. The end result in New York: higher education's share of the budget decreased on a percentage basis but actually increased on a dollar basis, from 1990 to 1995. The effect of enrollment was made clear in the Florida case. Appropriations per FTE dropped in Florida, but funding on a dollar basis actually increased. Enrollment increased by over 6.5% during this time, so state appropriation increases were not enough to keep pace with enrollment growth.

Finally, the cross-site matrix helped put the factors for California in perspective with respect to other states. In California, the family payment ratio almost doubled to 5.6%, but it remained the lowest of the five study states. By contrast, Michigan families spend 19.3% of their disposable income to pay the average public tuition rate.

Factors and Forces Affecting Funding to California Higher Education

It is important to present a systemic view of factors affecting state funding to California higher education. A decisionmaker's (legislators, higher education administrators, etc.) actions may change dramatically if state funding is considered systemically, as opposed to considering each factor in isolation. Viewing a situation systemically is akin to deciding a case in a court of law. If only one piece of evidence is presented, the judge may well make an erroneous ruling. If all available pieces of evidence are presented in the context of the case, the judge has a better chance of understanding the case and making a sound judgement.

The analysis presented three types of factors: contextual, transactional, and controllable. Layzell and Lyddon (1990) hypothesize that a state's historical, political, economic, and

demographic climate are the most important general determinants of state higher education funding. These two ideas can be merged to create a more comprehensive picture of the factors that affected state funding for California higher education in the first half of the 1990s. To avoid confusion, the four general determinants from Layzell and Lyddon will be referred to as "forces," and the specific factors will still be referred to as "factors." Also, the more general term "Social," will be used in lieu of the term "demographic."

Each of the factors can be grouped under one of the four general forces that influenced them. Some factors are difficult to place because they are affected by more than one force. These factors appear under two forces in Table 2 on the following page. Each factor contains a code in front of it to retain the idea of contextual (CX), transactional (TR) and controllable (CT).

Three factors in Table 2 were frequently mentioned by interviewees and merit additional comment: tuition, gubernatorial or legislative interest in higher education, and institutional expenditures.

Tuition. Tuition is affected by many forces. The history of California's 1960 Master Plan speaks to access and affordability for all able high school graduates, but the strength and meaning of this commitment is a continual subject of debate in the state. Political and economic forces also affect tuition. The idea that higher education should be seen as more of a private good than a public good is a point of political contention, and one that bears on subsequent yearly rates. One Roundtable participant who is the president of a research university said tuition setting is a political process, not a rational one. Finally, economic forces affect tuition. When the recession of the early 1990s hit its zenith and higher education funding decreased, tuition rose in all three California public higher education systems.

Table 2

Factors Affecting State Funding for California Higher Education

Historical
CX: Strength of privates
CX: Higher education governance structure
CX: Structure of state government (strong governor, weak legislature, etc)
TR: Tuition changes
TR: State versus student payment
TR: State student aid
Political
CX: Competing state interests
CX: Term Limits
TR: Appropriations/FTE
TR: Tuition changes
TR: State versus student payment
CT: Strength of educational leadership
CT: Gubernatorial or legislative interest in higher education
CT: Budget Process
Social
CX: Competing state interests
CX: Change in composition of population
CX: Change in income levels
CX: Future demand of higher education
CT: Gubernatorial or legislative interest in higher education
TR: Participation ratio
Economic
CX: Recession
CX: Change in tax capacity
CX: Shift in major industry in state
TR: Tuition changes
TR: State student aid
TR: Appropriations/FTE
CT: Institutional expenditures

State Interest: State officials' interest in higher education may be driven by personal political preferences or other social changes that demand attention. Virtually all who were interviewed agreed that higher education in California is quite complex, and the intricacies of its workings would take time to learn. This time is perceived as a liability by legislators who do not

want to invest too much focus in any one state function, especially given the institutionalization of term limits in the state. One former staffer said that even if a legislator took a keen interest in higher education, the system in California is such that educational leaders can bypass the legislature if they so choose by directly appealing to the governor.

Institutional Expenditures: Institutional expenditures as used here refers to how efficiently and effectively institutional leadership manages its pecuniary resources. Though higher education officials rarely spoke of managing expenses, several state officials pointed out problems of efficiency and effectiveness within the system. The concerns of the officials highlight how an economic problem (managing revenues and expenditures) can become a political liability if not given adequate attention.

California Compared to Other Case Study States

Tuition: Tuition rose more dramatically in California than all other case states, from 1990 to 1995. State funding in the other case states was maintained, or slightly improved, during this time, although some states experienced fluctuations in 1991 and 1992. Maintaining or improving state funding would then seem to be one possible alternative to combat tuition increases. Another alternative is state control over tuition. Florida legislation controls the level of tuition increases by stating that tuition levels cannot rise more than 10% per year or surpass 25% of the costs of undergraduate programs.

Several case respondents from states like New York and Florida believe the state's treatment of the private sector impacts public tuition. The private sector in these two states is supported through state programs, direct institutional aid, and student aid. Florida has numerous state programs available for private students and contracts with the private sector to provide

spaces in high demand programs. The private sector in both states claim the state can save money by providing private tuition assistance to students, at a total cost that is less than funding a full-time public student. New York is increasingly leaning toward providing state support directly to students rather than institutions. Most interviewees in these states view private program support as healthy competition for public funds. Many also view this as increasing choice and thus allowing the market to influence tuition rates so that they are not artificially raised.

State Interest: The cross-site analysis suggested that most of the states had either a governor or a legislature that was highly involved in higher education issues. Florida, for example, is a weak governor state. The legislature, however, is very involved in higher education issues. High state interest in higher education matters seemed to translate into an unwillingness to let higher education support drop too much. Michigan is a strong governor state, and part of Governor Engler's platform in the early 90s was a commitment to higher education. Several insiders in Michigan felt that the strength of the public institutions in the state makes it difficult to decrease appropriations, but the interview data also suggests Engler, along with a few key legislators, have been quite involved in fiscal matters related to higher education.

Institutional Expenditures: The final comparative issue is how a certain system or institution manages its resources. This is a difficult issue to address because the case studies did not draw heavily on data from higher education institutions or systems, mainly because the unit of analysis was the state. All of the case studies did contain interview and documented data that expressed concern over the efficiency of higher education's operations. In New York, for example, the governor has been extremely vocal in his belief that there are widespread inefficiencies within CUNY and SUNY. There also exists the implication that New York's current

attempt to increase funding to students rather than institutions stems from a belief that this will stimulate efficient institutional behavior. In Minnesota, the legislature responded to perceived inefficiencies by consolidating three separate systems into one. Michigan state officials spoke of inefficiencies within the state but are somewhat limited in taking action because of public higher education's constitutional autonomy. Florida officials appear to be concerned about providing enough spaces to those who will be demanding higher education, however, recent legislation has been aimed at addressing some issues of efficiency and effectiveness.

Although the magnitude of state funding cuts in the early 1990s were unexpected, Callan (1994) states that California higher education must adopt a mentality of accomplishing more with less, and it must learn to improve efficiency and eliminate fat by streamlining overhead and reducing excess administration, much like businesses had to.

A Conceptual View of Factors Affecting Higher Education Funding

Internal and External Forces: Public organizations can experience funding decline as the result of internal or external forces (Levine, 1980). That is, the decline may be the result of something the organization has done or something the environment has done to it. A factor that is internal to a higher education institution may not necessarily be within the institution's control. For example, the governance structure of the CSU system is an internal characteristic that cannot easily be changed.

Forces external to higher education are generally, though not always, out of higher education's control and are most associated with contextual factors. External forces that affect contextual factors are imposed on the system. Examples of contextual factors affected by external forces would be demographic trends, economic swings, state taxing capacity, and state

government structure. The strength of an external force on a contextual factor may negate an internal force's effect on a controllable factor. If a severe recession significantly depresses state revenues, it is probable that higher education's appropriation will be cut even if every institution is operating at maximum efficiency.

Internal and external forces often affect one another, making assignment of a factor as exclusively "internal" or "external" troublesome. For example, there may be little higher education can do about a state official who is uninterested in higher education. The official may also perceive that higher education is not doing its job, and she would rather champion other state causes. In this scenario, the politician's lack of interest in higher education (external) is compounded by her negative perception of it (higher education's internal workings translate into perceptions).

Levine uses a second dimension to describe state funding decline to public organizations: political/economic forces. This dimension is used to determine whether an internal or external problem is political or economic. A public organization may experience funding decline because of internal political discontinuity within the educational establishment or external political events (e.g. a change in state political leadership or a legislature that chooses other priorities over higher education). There also may be internal economic problems largely within the organization's control (e.g. inefficient operations) that are leading to funding stress; or external economic problems largely out of the organization or state's control (e.g. a public unwilling to provide more taxes as higher education demand is increasing).

It is often difficult to place factors along the political/economic dimension. Consider the case where the president of an institution is perceived to be a poor institutional manager. This

perception may be due to any number of reasons. Politically, the president may be serving under a strong board that is very paternalistic and involved in day-to-day operations. In this case, the president is relatively weak in trying to implement her ideas of operational efficiency. A major university president told us he no longer wanted to deal with the bipartisan bickering on the institution's board, and he felt petty political disagreements would stifle his efforts to improve the university in the future. On the other hand, a president may not have enough resources to provide for a burgeoning demand, actually making the issue of poor management an economic one (lack of resources). Finally, it is possible that the president is simply a poor manager of the institution which she oversees.

Figure 1 presents a systemic view of factors that affected state funding to California public higher education in the first half of the 1990. The figure leverages from Levine's typology for public organizations in decline by creating an internal/external dimension and a descriptive dimension (historical, political, social, economic). Figure 1 differs from Levine's typology in that it is geared specifically for higher education, it contains specific factors that define the dimensions of the framework; the descriptive dimension contains four forces rather than two; and factors are placed in the approximate area of the table that best describes it, without placing lines to create separate quadrants. This last point is important to preserve the idea that, in reality, a factor may result from the interplay of any number of forces along the two dimensions.

Levine's typology speaks only of funding decline, but one aspect of Strauss and Corbin's (1990) notion of "theoretical sensitivity" is to analyze a situation and then ask questions that force

Figure 1

FINAL TYPOLOGY OF FACTORS AFFECTING FUNDING FOR CA PUBLIC H.E.

	INTERNAL	EXTERNAL
HISTORICAL		CX Governance Structure CX Strength of Privates
POLITICAL	CT Strength of h.e. leadership TR State versus student payment	CX Structure of State Government CX Term Limits CT Budget Process CT Gubernatorial/legislative interest in h.e.
SOCIAL	TR Partipication Rate	CX Composition of population CX Competing state interests CX Future demand CX State financial aid
ECONOMIC	CT Institutional Management of Expenditures and Revenues	CX Change in income/capita CX Recession

TYPOLOGY OF PUBLIC HIGHER EDUCATION DECLINE VERSUS GROWTH

	INTERNAL	EXTERNAL
HISTORICAL	POLITICAL VULNERABILITY	PROBLEM DEPLETION
	VERSUS	VERSUS
POLITICAL	POLITICAL VITALITY	PROBLEM CIRCUMVENTION
SOCIAL	ORGANIZATIONAL ATROPHY	ENVIRONMENTAL ENTROPY
	VERSUS	VERSUS
ECONOMIC	ORGANIZATIONAL DEVELOPMENT	ENVIRONMENTAL OPPORTUNITY

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one to think about the situation in opposite terms. The concept of theoretical sensitivity will be used to expand Levine's labels for public funding decline and include explanations for why funding might increase. For example, a public organization that is not politically vulnerable has political

one to think about the situation in opposite terms. The concept of theoretical sensitivity will be used to expand Levine's labels for public funding decline and include explanations for why funding might increase. For example, a public organization that is not politically vulnerable has political vitality. Political vitality may be the result of strong internal leadership within a higher education establishment that maintains a harmonious, positive relationship with public officials. The opposite of organizational atrophy is that of organizational development. A public institution that thrives, fulfills its bona fide responsibility to the state; it wisely manages its resources; it constantly evaluates its programs and its staff; and it constantly strives for ways to improve student retention, to diversify its student body, and to assure that the percentage of those who complete a degree is increasing.

The opposite of problem depletion is problem circumvention. Problem depletion is when a problem occurs, the state reacts and attempts to fix it by increasing funding, and then decreases funding after the problem is eradicated. Problem circumvention is anticipating problems, planning ahead, and formulating strategy to deal with challenges. Instead of reacting to a problem, state officials and educational leaders can either conceive of long-term solutions for a current problem or anticipate the problem before it occurs. Of course, this is not always possible, but, when it is, funding will be more predictable and less vulnerable to irratic swings. The obvious opportunity that awaits California to "circumvent" a problem is that of its future enrollment demand.

Finally, the opposite of environmental entropy is that of environmental opportunity. Environmental entropy forecasts inevitable decay, whereas environmental opportunity is the idea that organization and environment exist in a symbiotic relationship that fosters growth and mutual benefit. Opportunity can be stimulated when the organization promotes its own positive image.

Taxpayers may then be more willing to pass bonds that support higher education; or businesses may be more willing to increase local taxes to support a community college. One of our interviews in Michigan provided a good example of environmental opportunity. A state staffer said that businesses expressed concern when local officials reported plans to reduce taxes. Local businesses wanted to assure that such a reduction would not coincide with reduced local support to the area's community college, and were in fact willing to forego the reduction if this was the case.

Conclusions

The factors contained in Figure 1 are applicable to the timeframe in which the California case study was done. Factors may be added or taken away as the higher education climate in California changes. The forces that define the dimensions may be thought of as the skeleton of the structure in Figure 2, and they do not change since they are general descriptors. The specific factors give the skeleton its appearance, but this appearance may change over time as the higher education environment changes.

Figure 2 is not intended to be generalized beyond California. However, with minor modifications, it may be applicable and useful to other states, especially since comparative data were used to illuminate understanding of how the various factors in California can affect state funding to higher education.

There are two practical reasons why one would want to look at higher education funding systemically. First, by considering multiple factors and their interaction, a more complete understanding of state funding for higher education can be obtained. This means that a policymaker or administrator has a better chance of focusing on those factors that are most

strongly bearing on funding at any given point in time. A factor may or may not be controllable or easily influenced, but understanding the factor may enable higher education to better prepare for funding fluctuations.

Secondly, a systemic view of higher education funding may not answer how more funding may be obtained, but, perhaps more importantly, it allows one to ask questions or raise issues that surface from examining the factors. For example, if higher education is seen as more of a private good (student portion of financing higher education is on the rise) than a public one, addressing questions of access and affordability becomes increasingly important. Another issue that surfaced from examining the factors is the consideration of educational leadership in light of the governor's influence in higher education funding. There was almost unanimous agreement among interviewees that CSU chancellor Barry Munitz has improved relations with the state and improved the image of CSU. Some respondents believe this is, in part, because the chancellor has a good relationship with the governor. Finally, the repeated mention of a particular factor, such as institutional expenditures, provides an impetus to investigate whether or not the recent increases can be explained.

State funding will be an increasingly crucial area of study for higher education because it is so intricately tied to a system's mission, goals and objectives of teaching, research, and service. Understanding the factors that affect the level of state funding will help higher education better prepare for a changing and uncertain future. It will draw attention to those things that are likely to impact legislative budgetary decisions. It also will draw attention to issues that are important considerations for higher education and policymakers to address.

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